Roy F. Weston, Inc.
Suite 5700
700 5th Avenue
Seattle, Washington 98104-5057
206-521-7600 • Fax 206-521-7601

MEMORANDUM

DATE: 2 December 1998

TO: David Bennett, WAM, U.S. EPA, Region X

FROM: Michelle Turner, Chemist, WESTON, Seattle
RMM Roger McGinnis, Senior Environmental Chemist, WESTON, Seattle

SUBJECT: Validation of Polychlorinated Biphenyls (Aroclor) Data
Laboratory Batch: K9805617
Site. Duwamish River

WORK ASSIGNMENT NO: 46-23-0JZZ

WORK ORDER NO.: 4000-019-038-5200-00

DOC. CONTROL NO : 4000-019-038-AAAK

cc: Bruce Woods, RAP-WAM, U.S EPA, Region X
Dena Hughes, Site Manager, WESTON, Seattle (memo only)
Kevin Mundell-Jackson, Database Management, WESTON, Seattle

The quality assurance review of fifteen sediment samples, laboratory batch K9805617, collected from the Duwamish River has been completed. Samples were analyzed for polychlorinated biphenyls as Aroclors using EPA Method 8082 by Columbia Analytical Services of Kelso, Washington. The samples were numbered

98344057	98344058	98344059	98344060	98344061
98344062	98344063	98344064	98344065	98344066
98344067	98344068	98344069	98344070	98344071

Data Qualifications

The following comments refer to the laboratory performance in meeting the quality control criteria described in the technical specifications of the laboratory subcontract The review follows the format described in the *National Functional Guidelines for Organic Data Review* (EPA OSWER Directive 9240.1-05, February 1994).

1. Timeliness

   All samples met holding time criteria of 14 days for sample extraction and 40 additional days for extract analysis.

2. Initial Calibration

   a) Mixed Aroclor 1016/1260 Standard

      A six point initial calibration was performed. Calibration factors were calculated for a minimum of five peaks, none of which are common to both Aroclors. The calibration factor percent relative standard deviation (%RSD) was less than 20 percent for all peaks used for quantitation.

   b) Individual Aroclor Standards

      Calibration factors were calculated from a mid-range standard for the other 5 Aroclors using 3 to 5 peaks.

3 Calibration Verification

   Aroclor 1016/1260 calibration verification standards were analyzed every 12 hours using a midrange standard. The calibration factor percent difference was less than 25 percent of the initial calibration value.

4. Retention Time Windows

   Retention Time Windows were calculated from initial calibration. Retention times for calibration verification standards were within established windows

5 Detection Limits

   Instrument detection limits met project required quantitation limits with the following exceptions:

Sample	Compound	QL Goal (µg/Kg)	Reported QL (µg/Kg)
98344065	Aroclor 1254	20	1300

Where quantitation limit goals were exceeded, undetected analytes were qualified (UI) to indicate matrix interference.

6 Blanks

a) Laboratory Method Blanks

Laboratory method blank frequency criteria were met.

No target analytes were reported in laboratory method blanks

b) Field Blanks

No field blanks were associated with this laboratory batch.

7 System Monitoring Compounds (Surrogates)

Hexabromobiphenyl was used as the surrogate Surrogate compound percent recovery met quality control criteria (P-project, L-laboratory) for all samples with the following exceptions.

Sample	Surrogate Compound	Percent Recovery	QC Limits
98344058	Hexabromobiphenyl	27	30-150 (P) 20-142 (L)
98344068MS	Hexabromobiphenyl	26	30-150 (P) 20-142 (L)

Results and quantitation limits for samples listed above were qualified as estimated (J/UJ) if any surrogates were outside the recovery limits

8. Matrix Spike and Matrix Spike Duplicate

Matrix spike (MS) or matrix spike duplicate (MSD) percent recovery for the following compounds were outside QC guidelines.

Sample	Compound	Percent Recovery	QC Limits
98344068MS	Aroclor 1016	21	36-126
98344068MS	Aroclor 1260	28	30-136

Relative percent differences (RPD) between the MS and MSD percent recoveries exceeded QC guidelines for the following compounds:

Sample	Compound	RPD	QC Limits
98344068	Aroclor 1016	67	35

No action was taken based solely on MS/MSD data

9 Laboratory Control Sample (LCS) Analysis

LCS recovery goals for Aroclors were established in the project Sampling and Analysis Plan at 70 to 130% for sediment. Based on conversations with the laboratory, historical control chart limits of 26 – 142 for Aroclor 1016 and 40-139 for Aroclor 1260 were also used for data qualification.

All LCS percent recoveries met QC guidelines (P-project, L-laboratory) except for the following compounds·

Sample	Compound	Percent Recovery	QC Limits
K980831-LCS	Aroclor 1016	57	70-130 (P) 26-142 (L)
K980831-LCS	Aroclor 1260	69	70-130 (P) 40-139 (L)

Results for compounds listed above were qualified as estimated (J)

10. Field Duplicate Analysis

Samples 98344058 and 98344059 were field duplicates. The relative percent difference between duplicate results was outside the 35 percent QC limit for the following compounds.

Analyte	Initial Result (µg/Kg)	Duplicate Result (µg/Kg)	% RPD
Aroclor 1242	47	283	143
Aroclor 1254	571	1160	68
Aroclor 1260	362	584	47

Results for the analytes listed above in samples 98344058 and 98344059 were qualified as estimated

11. Second Column Confirmation

The relative percent difference (RPD) in reported analyte concentration was greater than 35 percent for the primary and confirmation column for the following samples

Sample Number	Compound	DB-5 Conc (µg/Kg)	DB-1701 Conc (µg/Kg)	RPD
98344058	Aroclor 1242	266	47	140
98344059	Aroclor 1242	491	283	54
98344059	Aroclor 1254	1156	1802	44

Differences can arise from analytical interferences on one column However, the relative percent differences are not deemed significant at the reported concentrations. The lower concentration was reported for each analyte.

12 Sample Analysis

A cursory review of raw data was performed. All laboratory deliverables were present and complete. A laboratory replicate analysis was performed on sample 98344067. All RPD values were less than 35 percent. The case narrative notes that the MS recovery for Aroclors 1016 and 1260 for sample 98344068 were outside the laboratory QC limits. As the duplicate MS and LCS were within QC limits, no further action was taken No unusual problems were noted

13. Laboratory Contact

No laboratory contact was required

Data Assessment

Upon consideration of the data qualifications noted above, the data are ACCEPTABLE for use except where flagged with data qualifiers that modify the usefulness of the individual values.

Data Qualifiers

U - The compound was analyzed for, but was not detected

UJ - The compound was analyzed for, but was not detected. The associated quantitation limit is an estimate because quality control criteria were not met.

J - The analyte was positively identified, but the associated numerical value is an estimated quantity because quality control criteria were not met or because concentrations reported are less then CRDL or lowest calibration standard

R - Quality control indicates that data are unusable (compound may or may not be present) Resampling and reanalysis are necessary for verification.

N - Presumptive evidence of presence of material (tentative identification)

I - Elevated reporting limit due to matrix interference

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	Roy F Weston, Inc	**Service Request:**	K9805617
Project:	Duwamish River/4000-027-001-2019-38	**Date Collected:**	8/19/98
Sample Matrix:	Sediment	**Date Received:**	8/20/98

Polychlorinated Biphenyls (PCBs)

Sample Name	98344057	Units	ug/Kg (ppb)
Lab Code	K9805617-001	Basis	Dry
Test Notes			

Analyte	Prep Method	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Aroclor 1016	EPA 3550B	8082	20	1	8/31/98	9/14/98	ND	20U5
Aroclor 1221	EPA 3550B	8082	40	1	8/31/98	9/14/98	ND	
Aroclor 1232	EPA 3550B	8082	20	1	8/31/98	9/14/98	ND	
Aroclor 1242	EPA 3550B	8082	20	1	8/31/98	9/14/98	ND	
Aroclor 1248	EPA 3550B	8082	20	1	8/31/98	9/14/98	ND	
Aroclor 1254	EPA 3550B	8082	20	1	8/31/98	9/14/98	69	J
Aroclor 1260	EPA 3550B	8082	20	1	8/31/98	9/14/98	55	J

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Analytical Report

Client:	Roy F Weston, Inc	**Service Request:**	K9805617
Project:	Duwamish River/4000-027-001-2019-38	**Date Collected:**	8/19/98
Sample Matrix:	Sediment	**Date Received:**	8/20/98

Polychlorinated Biphenyls (PCBs)

Sample Name	98344058	Units	ug/Kg (ppb)
Lab Code	K9805617-002	Basis	Dry
Test Notes			

Analyte	Prep Method	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Aroclor 1016	EPA 3550B	8082	20	1	8/31/98	9/15/98	ND 20UJ	
Aroclor 1221	EPA 3550B	8082	40	1	8/31/98	9/15/98	ND 40UJ	
Aroclor 1232	EPA 3550B	8082	20	1	8/31/98	9/15/98	ND 20UJ	
Aroclor 1242	EPA 3550B	8082	20	1	8/31/98	9/15/98	47 J	
Aroclor 1248	EPA 3550B	8082	20	1	8/31/98	9/15/98	ND 20UJ	
Aroclor 1254	EPA 3550B	8082	20	1	8/31/98	9/15/98	571 J	
Aroclor 1260	EPA 3550B	8082	20	1	8/31/98	9/15/98	362 J	

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Analytical Report

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Project:	Duwamish River/4000-027-001-2019-38	**Date Collected:**	8/19/98
Sample Matrix:	Sediment	**Date Received:**	8/20/98

Polychlorinated Biphenyls (PCBs)

Sample Name	98344059	Units	ug/Kg (ppb)
Lab Code	K9805617-003	Basis	Dry
Test Notes			

Analyte	Prep Method	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Aroclor 1016	EPA 3550B	8082	20	1	8/31/98	9/15/98	ND	20UJ
Aroclor 1221	EPA 3550B	8082	40	1	8/31/98	9/15/98	ND	
Aroclor 1232	EPA 3550B	8082	20	1	8/31/98	9/15/98	ND	
Aroclor 1242	EPA 3550B	8082	20	1	8/31/98	9/15/98	283	J
Aroclor 1248	EPA 3550B	8082	20	1	8/31/98	9/15/98	ND	
Aroclor 1254	EPA 3550B	8082	20	1	8/31/98	9/15/98	1160	J
Aroclor 1260	EPA 3550B	8082	20	1	8/31/98	9/15/98	584	J

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Analytical Report

Client:	Roy F Weston, Inc	**Service Request:**	K9805617
Project:	Duwamish River/4000-027-001-2019-38	**Date Collected:**	8/19/98
Sample Matrix:	Sediment	**Date Received:**	8/20/98

Polychlorinated Biphenyls (PCBs)

Sample Name	98344060	Units	ug/Kg (ppb)
Lab Code	K9805617-004	Basis	Dry
Test Notes			

Analyte	Prep Method	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Aroclor 1016	EPA 3550B	8082	20	1	8/31/98	9/15/98	ND	20UJ
Aroclor 1221	EPA 3550B	8082	40	1	8/31/98	9/15/98	ND	
Aroclor 1232	EPA 3550B	8082	20	1	8/31/98	9/15/98	ND	
Aroclor 1242	EPA 3550B	8082	20	1	8/31/98	9/15/98	ND	
Aroclor 1248	EPA 3550B	8082	20	1	8/31/98	9/15/98	ND	
Aroclor 1254	EPA 3550B	8082	20	1	8/31/98	9/15/98	113	
Aroclor 1260	EPA 3550B	8082	20	1	8/31/98	9/15/98	76	J

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Analytical Report

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Project:	Duwamish River/4000-027-001-2019-38	**Date Collected:**	8/19/98
Sample Matrix:	Sediment	**Date Received:**	8/20/98

Polychlorinated Biphenyls (PCBs)

Sample Name	98344061	Units	ug/Kg (ppb)
Lab Code	K9805617-005	Basis	Dry
Test Notes			

Analyte	Prep Method	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Aroclor 1016	EPA 3550B	8082	20	1	8/31/98	9/15/98	ND	20UJ
Aroclor 1221	EPA 3550B	8082	40	1	8/31/98	9/15/98	ND	
Aroclor 1232	EPA 3550B	8082	20	1	8/31/98	9/15/98	ND	
Aroclor 1242	EPA 3550B	8082	20	1	8/31/98	9/15/98	ND	
Aroclor 1248	EPA 3550B	8082	20	1	8/31/98	9/15/98	ND	
Aroclor 1254	EPA 3550B	8082	20	1	8/31/98	9/15/98	50	
Aroclor 1260	EPA 3550B	8082	20	1	8/31/98	9/15/98	45	J

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Analytical Report

Client:	Roy F Weston, Inc	**Service Request:**	K9805617
Project:	Duwamish River/4000-027-001-2019-38	**Date Collected:**	8/19/98
Sample Matrix:	Sediment	**Date Received:**	8/20/98

Polychlorinated Biphenyls (PCBs)

Sample Name	98344062	Units	ug/Kg (ppb)
Lab Code	K9805617-006	Basis	Dry
Test Notes			

Analyte	Prep Method	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Aroclor 1016	EPA 3550B	8082	20	1	8/31/98	9/15/98	ND	20UJ
Aroclor 1221	EPA 3550B	8082	40	1	8/31/98	9/15/98	ND	
Aroclor 1232	EPA 3550B	8082	20	1	8/31/98	9/15/98	ND	
Aroclor 1242	EPA 3550B	8082	20	1	8/31/98	9/15/98	ND	
Aroclor 1248	EPA 3550B	8082	20	1	8/31/98	9/15/98	ND	
Aroclor 1254	EPA 3550B	8082	20	1	8/31/98	9/15/98	67	
Aroclor 1260	EPA 3550B	8082	20	1	8/31/98	9/15/98	44	J

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Analytical Report

Client:	Roy F Weston, Inc	**Service Request:**	K9805617
Project:	Duwamish River/4000-027-001-2019-38	**Date Collected:**	8/19/98
Sample Matrix:	Sediment	**Date Received:**	8/20/98

Polychlorinated Biphenyls (PCBs)

Sample Name	98344063	Units	ug/Kg (ppb)
Lab Code	K9805617-007	Basis	Dry
Test Notes			

Analyte	Prep Method	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Aroclor 1016	EPA 3550B	8082	20	1	8/31/98	9/15/98	ND	20 UJ
Aroclor 1221	EPA 3550B	8082	40	1	8/31/98	9/15/98	ND	
Aroclor 1232	EPA 3550B	8082	20	1	8/31/98	9/15/98	ND	
Aroclor 1242	EPA 3550B	8082	20	1	8/31/98	9/15/98	ND	
Aroclor 1248	EPA 3550B	8082	20	1	8/31/98	9/15/98	ND	
Aroclor 1254	EPA 3550B	8082	20	1	8/31/98	9/15/98	48	
Aroclor 1260	EPA 3550B	8082	20	1	8/31/98	9/15/98	59	J

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Analytical Report

Client:	Roy F Weston, Inc	**Service Request:**	K9805617
Project:	Duwamish River/4000-027-001-2019-38	**Date Collected:**	8/19/98
Sample Matrix:	Sediment	**Date Received:**	8/20/98

Polychlorinated Biphenyls (PCBs)

Sample Name	98344065	Units	ug/Kg (ppb)
Lab Code	K9805617-008	Basis	Dry
Test Notes			

Analyte	Prep Method	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Aroclor 1016	EPA 3550B	8082	20	1	8/31/98	9/15/98	ND	20UJ
Aroclor 1221	EPA 3550B	8082	40	1	8/31/98	9/15/98	ND	
Aroclor 1232	EPA 3550B	8082	20	1	8/31/98	9/15/98	ND	
Aroclor 1242	EPA 3550B	8082	20	1	8/31/98	9/15/98	ND	
Aroclor 1248	EPA 3550B	8082	20	1	8/31/98	9/15/98	ND	
Aroclor 1254	EPA 3550B	8082	1300	10	8/31/98	9/15/98	ND	1300UJD
Aroclor 1260	EPA 3550B	8082	200	10	8/31/98	9/15/98	4200	J

D The MRL is elevated because of matrix interferences and because the sample required diluting

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Project:	Duwamish River/4000-027-001-2019-38	**Date Collected:**	8/19/98
Sample Matrix:	Sediment	**Date Received:**	8/20/98

Polychlorinated Biphenyls (PCBs)

Sample Name	98344064	Units	ug/Kg (ppb)
Lab Code	K9805617-009	Basis	Dry
Test Notes			

Analyte	Prep Method	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Aroclor 1016	EPA 3550B	8082	20	1	8/31/98	9/15/98	ND	20UJ
Aroclor 1221	EPA 3550B	8082	40	1	8/31/98	9/15/98	ND	
Aroclor 1232	EPA 3550B	8082	20	1	8/31/98	9/15/98	ND	
Aroclor 1242	EPA 3550B	8082	20	1	8/31/98	9/15/98	ND	
Aroclor 1248	EPA 3550B	8082	20	1	8/31/98	9/15/98	ND	
Aroclor 1254	EPA 3550B	8082	20	1	8/31/98	9/15/98	46	
Aroclor 1260	EPA 3550B	8082	20	1	8/31/98	9/15/98	41	J

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Analytical Report

Client:	Roy F Weston, Inc	**Service Request:**	K9805617
Project:	Duwamish River/4000-027-001-2019-38	**Date Collected:**	8/19/98
Sample Matrix:	Sediment	**Date Received:**	8/20/98

Polychlorinated Biphenyls (PCBs)

Sample Name	98344066	Units	ug/Kg (ppb)
Lab Code	K9805617-010	Basis	Dry
Test Notes			

Analyte	Prep Method	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Aroclor 1016	EPA 3550B	8082	20	1	8/31/98	9/15/98	ND	20UJ
Aroclor 1221	EPA 3550B	8082	40	1	8/31/98	9/15/98	ND	
Aroclor 1232	EPA 3550B	8082	20	1	8/31/98	9/15/98	ND	
Aroclor 1242	EPA 3550B	8082	20	1	8/31/98	9/15/98	ND	
Aroclor 1248	EPA 3550B	8082	20	1	8/31/98	9/15/98	ND	
Aroclor 1254	EPA 3550B	8082	20	1	8/31/98	9/15/98	82	
Aroclor 1260	EPA 3550B	8082	20	1	8/31/98	9/15/98	57	J

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Analytical Report

Client:	Roy F Weston, Inc	**Service Request:**	K9805617
Project:	Duwamish River/4000-027-001-2019-38	**Date Collected:**	8/19/98
Sample Matrix:	Sediment	**Date Received:**	8/20/98

Polychlorinated Biphenyls (PCBs)

Sample Name	98344067	Units	ug/Kg (ppb)
Lab Code	K9805617-011	Basis	Dry
Test Notes			

Analyte	Prep Method	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Aroclor 1016	EPA 3550B	8082	20	1	8/31/98	9/15/98	ND	20 U J
Aroclor 1221	EPA 3550B	8082	40	1	8/31/98	9/15/98	ND	
Aroclor 1232	EPA 3550B	8082	20	1	8/31/98	9/15/98	ND	
Aroclor 1242	EPA 3550B	8082	20	1	8/31/98	9/15/98	ND	
Aroclor 1248	EPA 3550B	8082	20	1	8/31/98	9/15/98	ND	
Aroclor 1254	EPA 3550B	8082	20	1	8/31/98	9/15/98	29	
Aroclor 1260	EPA 3550B	8082	20	1	8/31/98	9/15/98	25	J

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Analytical Report

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Sample Matrix:	Sediment	**Date Received:**	8/20/98

Polychlorinated Biphenyls (PCBs)

Sample Name	98344068	Units	ug/Kg (ppb)
Lab Code	K9805617-012	Basis	Dry
Test Notes			

Analyte	Prep Method	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Aroclor 1016	EPA 3550B	8082	20	1	8/31/98	9/15/98	ND	20 UJ
Aroclor 1221	EPA 3550B	8082	40	1	8/31/98	9/15/98	ND	
Aroclor 1232	EPA 3550B	8082	20	1	8/31/98	9/15/98	ND	
Aroclor 1242	EPA 3550B	8082	20	1	8/31/98	9/15/98	ND	
Aroclor 1248	EPA 3550B	8082	20	1	8/31/98	9/15/98	ND	
Aroclor 1254	EPA 3550B	8082	20	1	8/31/98	9/15/98	72	
Aroclor 1260	EPA 3550B	8082	20	1	8/31/98	9/15/98	77	J

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Analytical Report

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Project:	Duwamish River/4000-027-001-2019-38	**Date Collected:**	8/19/98
Sample Matrix:	Sediment	**Date Received:**	8/20/98

Polychlorinated Biphenyls (PCBs)

Sample Name	98344069	Units	ug/Kg (ppb)
Lab Code	K9805617-013	Basis	Dry
Test Notes			

Analyte	Prep Method	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Aroclor 1016	EPA 3550B	8082	20	1	8/31/98	9/15/98	ND	20 UJ
Aroclor 1221	EPA 3550B	8082	40	1	8/31/98	9/15/98	ND	
Aroclor 1232	EPA 3550B	8082	20	1	8/31/98	9/15/98	ND	
Aroclor 1242	EPA 3550B	8082	20	1	8/31/98	9/15/98	ND	
Aroclor 1248	EPA 3550B	8082	20	1	8/31/98	9/15/98	ND	
Aroclor 1254	EPA 3550B	8082	20	1	8/31/98	9/15/98	58	
Aroclor 1260	EPA 3550B	8082	20	1	8/31/98	9/15/98	45	J

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COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	Roy F Weston, Inc	**Service Request:**	K9805617
Project:	Duwamish River/4000-027-001-2019-38	**Date Collected:**	8/19/98
Sample Matrix:	Sediment	**Date Received:**	8/20/98

Polychlorinated Biphenyls (PCBs)

Sample Name	98344070	Units	ug/Kg (ppb)
Lab Code	K9805617-014	Basis	Dry
Test Notes			

Analyte	Prep Method	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Aroclor 1016	EPA 3550B	8082	20	1	8/31/98	9/15/98	ND	20UJ
Aroclor 1221	EPA 3550B	8082	40	1	8/31/98	9/15/98	ND	
Aroclor 1232	EPA 3550B	8082	20	1	8/31/98	9/15/98	ND	
Aroclor 1242	EPA 3550B	8082	20	1	8/31/98	9/15/98	ND	
Aroclor 1248	EPA 3550B	8082	20	1	8/31/98	9/15/98	ND	
Aroclor 1254	EPA 3550B	8082	20	1	8/31/98	9/15/98	34	
Aroclor 1260	EPA 3550B	8082	20	1	8/31/98	9/15/98	30	J

MQT 11/23/98

Approved By _____ Date 9/14/98

1S22/020597p

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	Roy F Weston, Inc	**Service Request:**	K9805617
Project:	Duwamish River/4000-027-001-2019-38	**Date Collected:**	8/19/98
Sample Matrix:	Sediment	**Date Received:**	8/20/98

Polychlorinated Biphenyls (PCBs)

Sample Name	98344071	Units	ug/Kg (ppb)
Lab Code	K9805617-015	Basis	Dry
Test Notes			

Analyte	Prep Method	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Aroclor 1016	EPA 3550B	8082	20	1	8/31/98	9/15/98	ND	ZWLJ
Aroclor 1221	EPA 3550B	8082	40	1	8/31/98	9/15/98	ND	
Aroclor 1232	EPA 3550B	8082	20	1	8/31/98	9/15/98	ND	
Aroclor 1242	EPA 3550B	8082	20	1	8/31/98	9/15/98	ND	
Aroclor 1248	EPA 3550B	8082	20	1	8/31/98	9/15/98	ND	
Aroclor 1254	EPA 3550B	8082	20	1	8/31/98	9/15/98	67	
Aroclor 1260	EPA 3550B	8082	20	1	8/31/98	9/15/98	58	J

WTJ 11/25/98

Approved By _____ Date 9/14/98

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